

# Bloom's Taxonomy

2<sup>nd</sup> class – CCNY – Fall 2011

Differentiated Instruction

[http://www.odu.edu/educ/roverbau/Bloom/blooms\\_taxonomy.htm](http://www.odu.edu/educ/roverbau/Bloom/blooms_taxonomy.htm)



OLD



NEW

In 1956, Benjamin Bloom headed a group of educational psychologists who developed a **classification of levels of intellectual behavior important in learning**. During the 1990's a new group of cognitive psychologist, lead by Lorin Anderson (a former student of Bloom's), updated the taxonomy reflecting relevance to 21st century work. The graphic is a representation of the NEW verbage associated with the long familiar Bloom's Taxonomy. Note the change from Nouns to Verbs to describe the different levels of the taxonomy.

**Remembering:** can the student recall or remember the information? define, duplicate, list, memorize, recall, repeat, reproduce state

**Understanding:** can the student explain ideas or concepts? classify, describe, discuss, explain, identify, locate, recognize, report, select, translate, paraphrase

**Applying:** can the student use the information in a new way? choose, demonstrate, dramatize, employ, illustrate, interpret, operate, schedule, sketch, solve, use, write.

**Analyzing:** can the student distinguish between the different parts? appraise, compare, contrast, criticize, differentiate, discriminate, distinguish, examine, experiment, question, test.

**Evaluating:** can the student justify a stand or decision? appraise, argue, defend, judge, select, support, value, evaluate

**Creating:** can the student create new product or point of view? assemble, construct, create, design, develop, formulate, write.

- **Bloom's as a learning process.**
- Bloom's Taxonomy in its various forms represents the process of learning. It has been simplified in some case like the **Three Story Intellect** (Oliver Wendell Holmes and Art Costa), but it still essentially represents how we learn.

Before we can understand a concept we have to remember it

Before we can **apply** the concept we must **understand** it

Before we **analyse** it we must be able to **apply** it

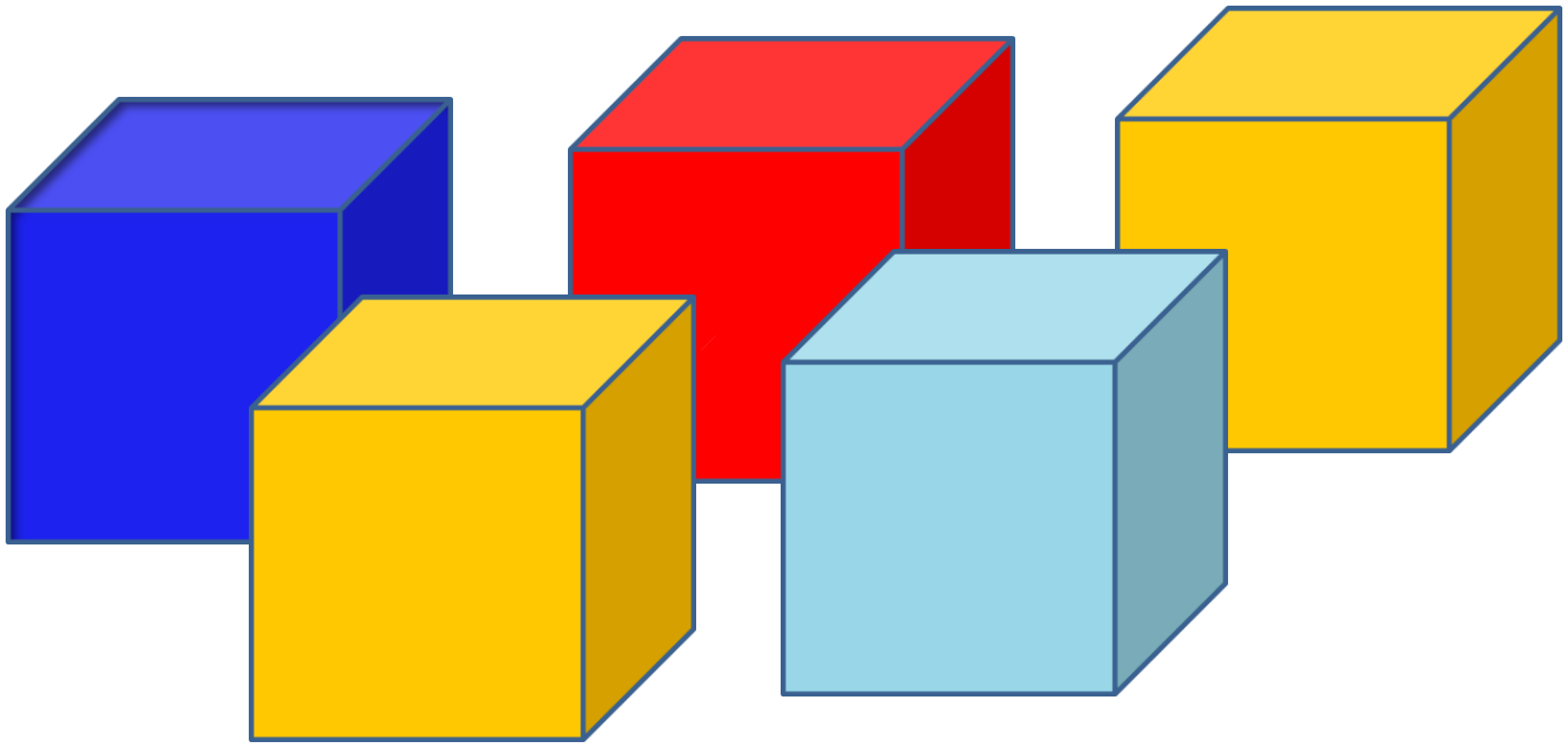
Before we can **evaluate** its impact we must have **analysed** it

Before we can **create** we must have **remembered, understood, applied, analysed, and evaluated.**

# The Process of Learning

- Before we can understand a concept we have to **remember** it
- Before we can **apply** the concept we must **understand** it
- Before we **analyse** it we must be able to **apply** it
- Before we can **evaluate** its impact we must have **analysed** it
- Before we can **create** we must have **remembered, understood, applied, analysed, and evaluated.**

# Let's make some cubes





# Creating a Cubing Exercise

- Start by deciding which part of your unit lends itself to optional activities. Decide which concepts in this unit can you create a cube for. Is it possible for you to make 3 cubes for 3 different interests, levels, or topics?
- **First Step:** (use one of the cubes)
  - Write 6 questions that ask for information on the selected unit.
  - Use your 6 levels of Bloom, intelligence levels, or any of the cubing statements to design questions.
  - Make questions that use these levels that probe the specifics of your unit.
  - Keep one question opinion based – no right or wrong.
- **Second Step:** (use other cubes)
  - Use the first cube as your “average” cube, create 2 more using one as a lower level and one as a higher level.
  - Remember all cubes need to cover the same type of questions, just geared to the level, don’t water down or make too busy!
  - Label your cubes so you know which level of readiness you are addressing.
  - Hand your partner the cubes and ask if they can tell high, medium, or low. If they can’t tell, adjust slightly.
- **Third Step:**
  - Always remember to have an easy problem on each cube and a hard one regardless the levels.
  - Color code the cubes for easy identification and also if students change cubes for questions.
  - Decide on the rules: Will the students be asked to do all 6 sides? Roll and do any 4 sides? Do any two questions on each of the 3 cubes?

## **Places to get questions:**

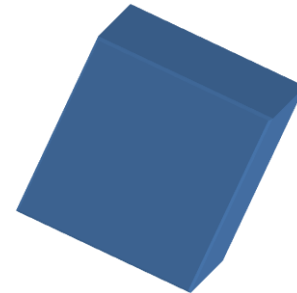
Old quizzes, worksheets, textbook-study problems, students generated.

# CUBING

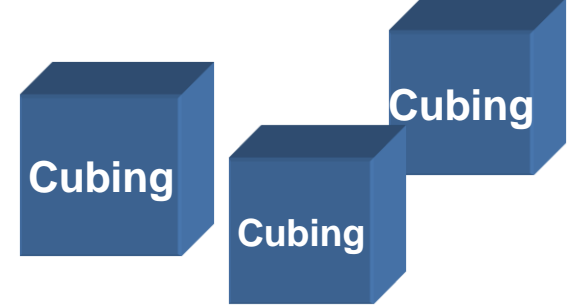
1. **Describe it:** Look at the subject closely (perhaps with your senses as well as your mind)
2. **Compare it:** What is it similar to? What is it different from?
3. **Associate it:** What does it make you think of? What comes to your mind when you think of it? Perhaps people? Places? Things? Feelings? Let your mind go and see what feelings you have for the subject.
4. **Analyze it:** Tell how it is made? What are its traits and attributes?
5. **Apply it:** Tell what you can do with it. How can it be used?
6. **Argue for it or against it:** Take a stand. Use any kind of reasoning you want – logical, silly, anywhere in between.

Or you can . . . .

- Rearrange it
- Illustrate it
- Question it
- Satirize it
- Evaluate it
- Connect it
- Cartoon it
- Change it
- Solve it



# Ideas for Cubing



- **Arrange** \_\_\_\_\_ into a 3-D collage to show \_\_\_\_\_
- **Make** a body sculpture to show \_\_\_\_\_
- **Create** a dance to show
- **Do** a mime to help us understand
- **Present** an interior monologue with dramatic movement that \_\_\_\_\_
- **Build/construct** a representation of \_\_\_\_\_
- **Make** a living mobile that shows and balances the elements of \_\_\_\_\_
- **Create** authentic sound effects to accompany a reading of \_\_\_\_\_
- **Show** the principle of \_\_\_\_\_ with a rhythm pattern you create. Explain to us how that works.

## **Ideas for Cubing in Math**

- **Describe** how you would solve \_\_\_\_\_
- **Analyze** how this problem helps us use mathematical thinking and problem solving
- **Compare and contrast** this problem to one on page \_\_\_\_\_.
- **Demonstrate** how a professional (or just a regular person) could apply this kink or problem to their work or life.
- **Change** one or more numbers, elements, or signs in the problem. Give a rule for what that change does.
- **Create** an interesting and challenging word problem from the number problem. (Show us how to solve it too.)
- **Diagram or illustrate** the solutionj to the problem. Interpret the visual so we understand it.

<p><b>Red Cube</b></p>	<p><b>Describe</b></p> <p>Your favorite picture in the story <u>Family Pictures</u>. Tell why you picked that one.</p>	<p><b>Big Idea:</b></p> <p>To understand basic connections that all people have regardless of their culture in order to function in the real world</p>
<p><b>Compare</b></p> <p>Your favorite picture in the story <u>Family Pictures</u> to a similar activity in your life. You may use words and/or pictures</p>	<p><b>List</b></p> <p>Words that describe your feelings about the Mexican culture as you look at each picture in the story.</p>	<p><b>Chart</b></p> <p>Using a Venn diagram, show your favorite things and compare to the favorite things you found in the story. Find common areas that you and the story share.</p>
<p><b>Third Grade Southwest Unit Cubing Example <u>Family Pictures</u> by Carmen Lomas Garza</b></p>	<p><b>Analyze</b></p> <p>The favorite things in the story by understanding why these might be traditions in the culture. If you were a researcher asked about the important things in the Mexican culture, what would you say.</p>	<p>Adapted from a lesson by Joy Peters, Nebraska</p>
	<p><b>Justify</b></p> <p>The story describes a family that speaks a different language and come from a different culture. Justify why it is important to meet people who speak a different language and have a different culture.</p>	

<p><b>Orange Cube</b></p>	<p><b>Describe</b></p> <p>The Mexican culture using at least three sentences with three describing words in each sentence.</p>	<p><b>Big Idea:</b></p> <p>To understand basic connections that all people have regardless of their culture in order to function in the real world</p>
<p><b>Compare</b></p> <p>Use the Compare/Contrast graphic organizer and look at areas of food, shelter, traditions, family life, fun</p>	<p><b>Pretend</b></p> <p>That you are a child from Mexico. Tell me about your day. What would your chores be? What would you eat? How would you spend your free time? Would you take naps? Tell me why.</p>	<p><b>Critique</b></p> <p>Find another story to read at the reading center. Compare it to <u>Family Pictures</u> and discuss elements you liked and did not like of either.</p>
<p><b>Third Grade Southwest Unit Cubing Example</b></p> <p><u>Family Pictures</u> by Carmen Lomas Garza</p>	<p><b>Create</b></p> <p>Make your own family album by drawing at least five special activities your family shares</p>	
	<p><b>Dance</b></p> <p>Choreograph a dance or mime to represent three main ideas that you learned about the Mexican culture.</p>	

Adapted from a lesson by  
Joy Peters, Nebraska

- Grade 3 Weather Watch

	<p>1. Define the following terms:</p> <ul style="list-style-type: none"> <li>a. tornado</li> <li>b. "tornado watch"</li> <li>c. funnel</li> <li>d. spin</li> <li>e. counterclockwise</li> <li>f. twister</li> <li>g. nonfiction</li> </ul>	<p><i>Key</i> <i>Bloom's Taxonomy</i></p> <ul style="list-style-type: none"> <li>1. Knowledge</li> <li>2. Comprehension</li> <li>3. Application</li> <li>4. Analysis</li> <li>5. Synthesis</li> <li>6. Evaluation</li> </ul>
<p>2. Make a three-part drawing that shows a town before, during and after a tornado. Use labels to explain what is happening.</p>	<p>3. Tornadoes are one of the most powerful forces in nature. Nature's power can also be seen in waterfalls, ocean waves, thunderstorms, and even breezes. Write a paragraph describing some force you have observed in nature. Use vivid adjectives to best describe the power of nature in your example.</p>	<p>4. Compare a tornado with a hurricane. Use these categories to report what you found:</p> <ul style="list-style-type: none"> <li>• Where is each usually found?</li> <li>• How strong are the winds?</li> <li>• What kind of damage does each one cause?</li> </ul> <p>Report results on a chart.</p>
	<p>5. Working with the powerful forces of nature can be dangerous. Which of the following jobs do you think is most dangerous? Which is the least dangerous? Why?</p> <ul style="list-style-type: none"> <li>• Forest firefighter</li> <li>• Park Ranger</li> <li>• Tornado Watcher</li> <li>• "On-the-scene" weather reporter</li> </ul>	
	<p>6. Write an adventure story about a tornado. You may make it appear to be very real with people doing things that would appear to be normal. Or, you could create a story where the characters are different than life – like a talking cat or a character like Superman.</p>	

Grade 3 – Weather Watch

	<p>1. Answer the following questions:</p> <ol style="list-style-type: none"> <li>What the signs that a tornado is coming?</li> <li>What causes tornados?</li> <li>What dangerous effects can a tornado have?</li> <li>What should you do if a tornado is coming?</li> </ol>	<p><i>Key</i>  <i>Bloom's Taxonomy</i></p> <ol style="list-style-type: none"> <li><i>Knowledge</i></li> <li><i>Comprehension</i></li> <li><i>Application</i></li> <li><i>Analysis</i></li> <li><i>Synthesis</i></li> <li><i>Evaluation</i></li> </ol>
<p>2. Create a web, diagram or drawing that shows the basic features of a tornado. Include how it is formed, its' make-up, speed, path, and lifespan.</p>	<p>3. Your school is located in a potential tornado area. Develop a set of directions for what your class should do in case of a tornado warning.</p>	<p>4. Create four to six questions a reporter could ask observers or victims of a tornado. The questions must get people to talk about what happened – not answered in “YES” or “NO” responses. Act out the interview with a friend.</p>
	<p>5. Design a scale for evaluating tornados. Describe how your scale would work.</p>	
	<p>6. You are a tornado. Write a story (or poem) about your life, feelings, and thoughts.</p>	

Grade 3 Weather Watch

1. What are the seven states that have the most tornados?

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.
- 7.

*Key*  
*Bloom's Taxonomy*

1. Knowledge
2. Comprehension
3. Application
4. Analysis
5. Synthesis
6. Evaluation

2. Draw a picture of a tornado. With arrows, labels on the picture and words describe how the tornado is formed.

3. If you were "Mother Nature" and wanted to cook-up a tornado, what ingredients would you mix together and in what order.

4. What are the differences between a tornado and a thunderstorm? What is the same?

What are the differences between a tornado and a blizzard? What is the same?

5. What are the duties of a "tornado watcher"? Is it a dangerous job? Would you like to be one? Why or why not?

6. Trace on a map the path of an average tornado starting five miles west of your home and traveling east. What would be destroyed? How many people might be hurt?



# Cubing with *Charlotte's Web*

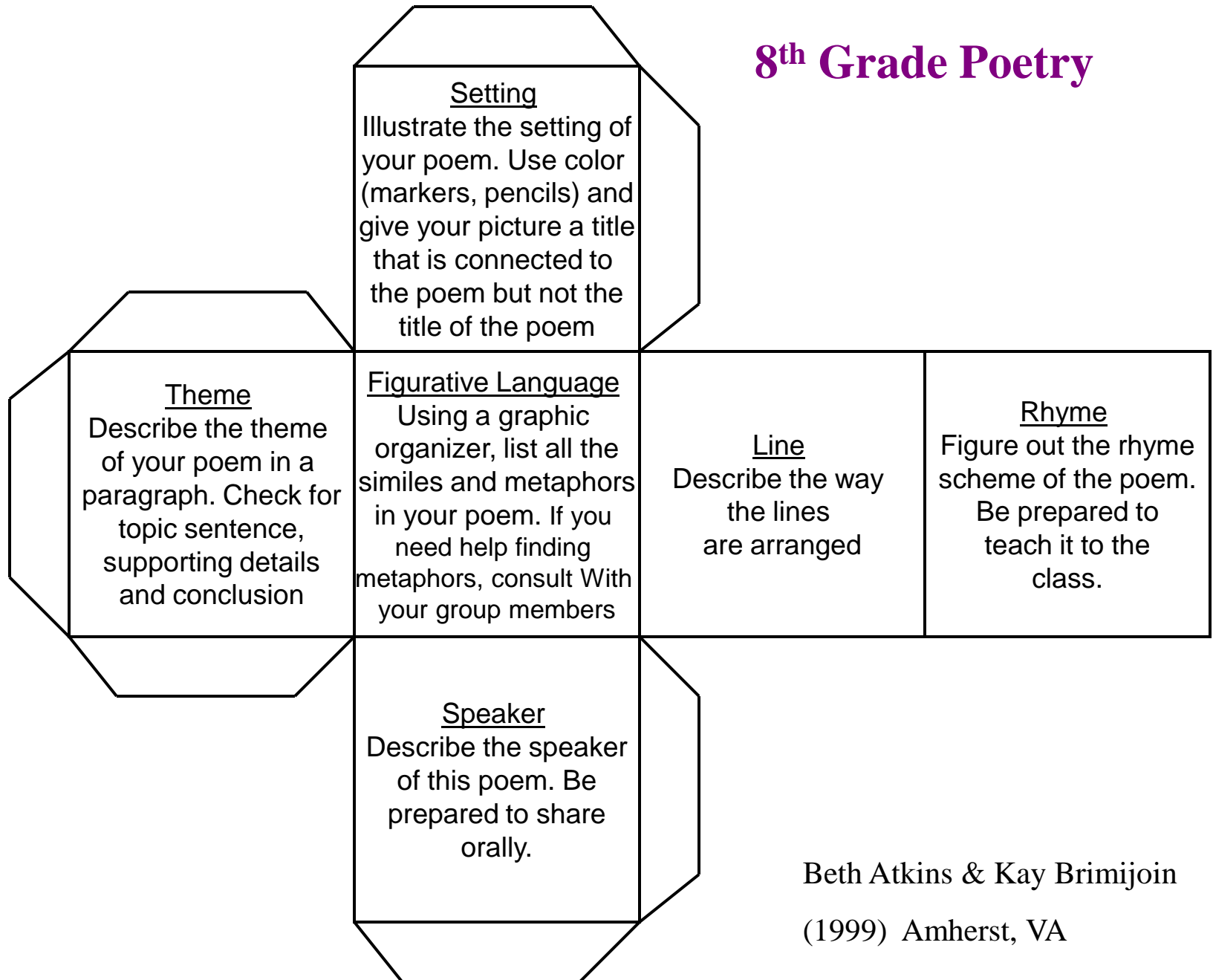
## Basic Cube

1. Draw Charlotte as you think she looks.
2. Use a Venn diagram and compare Charlotte and Fern.
3. Use a comic strip to tell what happened in this chapter.
4. Shut your eyes and describe the barn. Jot down your ideas.
5. Predict what will happen in the next chapter using symbols.
6. In your opinion, why is Charlotte a good friend?

## Abstract Cube

1. Use a graphics program on the computer and create a character web for Wilbur.
2. Use symbols on a Venn diagram to compare Wilbur and Charlotte.
3. Draw the farm and label the items, people, and buildings.
4. Use a storyboard to show the progress of the plot to this point.
5. What is the message that you think the writer wants people to remember? Draw a symbol that illustrates your ideas.
6. When you think of the title, do you agree or disagree that it is a good choice? Why or why not?

## 8<sup>th</sup> Grade Poetry



Beth Atkins & Kay Brimijoin  
(1999) Amherst, VA

## 8<sup>th</sup> Grade Poetry

Setting  
Illustrate the setting of your poem. Use color (markers, pencils) and give your picture a title that is connected to the poem but not the title of the poem

Theme  
Compare the theme of your poem to the theme of a story or novel you have read. Use a Venn diagram to show your comparison.

Figurative Language  
Tell how the similes and metaphors in your poem enhance the imagery. Be prepared to share orally.

Rhyme  
What does the rhyme scheme have to do with the meaning of the poem? Why do you think the poet chose this pattern?

Line  
Describe the impact the line arrangement has on the poem. Argue convincingly in a short paragraph.

Speaker  
How does the speaker feel? Find at least 2 feelings and be prepared to explain orally.

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## 8<sup>th</sup> Grade Poetry

<p><u>Setting</u> If your poet were an artist, how would he/she express this poem as a picture? Use markers, pencils, etc. to illustrate your answer.</p>	<p><u>Rhyme</u> Provide other examples Of rhyme or rhythm Besides end rhyme used in your poem. How does this add To the sound of the Poem? Be prepared To share orally</p>	
<p><u>Theme</u> Write a short poem to express the theme of the poem you have chosen. Choose your own style.</p>	<p><u>Figurative Language</u> Write 2 more similes and metaphors that could be added to the poem.</p>	<p><u>Line</u> How would the poet arrange the next lines of this poem if he/she were extending the meaning and theme? _</p>
<p><u>Speaker</u> Create another line for this poem that the speaker may have written.</p>		

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